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5 February 1968

Ref: LJC 1001

Post Office Box 5788
 Fort Davis Station
 Washington, D.C. 20020

Attention:

Contracting Officer

Subject: Request for Proposal No. RD-14-68
 Project No. 02037

Dear Sir:

is pleased to submit the enclosed Technical Proposal and Cost Quotation for the Advanced Light Table Prototype.

is in agreement with all of the specifications in the design objective with the exception of the design goal weight limitation of 60 pounds. It is our opinion that in order to meet all the other conditions of the design objective, we must exceed the weight limitation of 60 pounds, lest we make the price prohibitive.

The cost for design and development and building the Advanced Light Table Prototype is This is a firm fixed price that is valid for sixty (60) days. The delivery schedule may be found in the Technical Proposal. The following budgetary costs are for the contemplated production follow-on:

25 units
 50 units
 75 units
 100 units

While the above prices are budgetary in nature, we place every confidence in our ability to deliver the production units at prices equal to those we

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 DOES NOT APPLY

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[Redacted]

Contracting Officer

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5 February 1958

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are quoting. The data and drawing requirements represent a sizeable impact on the price quotation for the prototype. A significant savings could be realized if these requirements were relaxed.

A detailed cost breakdown has been included as an attachment to this letter.

If additional information is required, please contact the undersigned.

Very truly yours,

[Redacted]

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WRK/cc
encls.

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3cc letter & Encls. to:

[Redacted]

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2.0

CONDITIONS OF PROPOSAL

A. F.O.B. Point

All prices quoted in the letter attached hereto are F.O.B.
manufacturing facilities,

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B. Inspection and Acceptance

Final inspection and final acceptance of articles shall be at
manufacturing facilities,

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C. Packaging

Packaging shall be in accordance with best commercial practice
for domestic shipments.

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D. Payment

terms of payment are net thirty (30) days.

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E. Contract Type

proposes to perform these services on a cost plus fixed-fee type
contract, with the required clauses, equivalent to those delineated in Section 7-203
of Armed Services Procurement Regulations.

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F. Firm Period

This quotation shall remain firm for a period of sixty (60) days from the
date hereof.

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A-1219

February 2, 1968

25X1
[Redacted]
Contracting Officer
Post Office Box 6788
Fort Davis Station
Washington, D. C. 20020

25X1
[Redacted]
Reference: Request for Proposal No. KD-41-66
Project No. 02037

Dear Mr. Carnahan:

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In response to subject request, [Redacted] is pleased to provide a proposal to design and manufacture one (1) each prototype unit, Advanced Light Table. This proposal offers two approaches, a Basic (or responsive) Bid, and an Alternate Bid. The latter provides a prototype identical to the Basic Bid excepting the added feature of a full-power film-drive system which operates uniformly down through the very low speed ranges.

For the design and manufacture of a prototype, our bids are based on a cost-plus-fixed-fee type contract. In addition, for the two approaches planning estimates are provided for production quantities of 25, 50, 75 and 100 each.

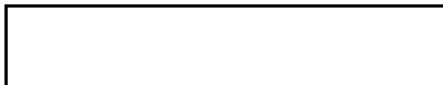
Enclosure 1 hereto, Technical Proposal, contains the technical descriptions, work statement, and deliveries. Enclosure 2 hereto, Price Proposal, contains the pricing data and provisions upon which our proposal is based. The pricing data includes a breakdown for the design and manufacture of the prototype and budgetary prices of production quantities for your planning purposes.

In this proposal our prime goal is to offer you the optimum design in relation to your requirement, for the minimum practical nonrecurring and recurring costs, and emphasizing simplicity, reliability, and ease of operation and maintenance. We sincerely feel we are eminently qualified to perform on your program requirements, and appreciate the opportunity to submit this proposal.

This document contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Sec. 793 and 794, and the transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

MAE 67-203
Copy 3 of 6

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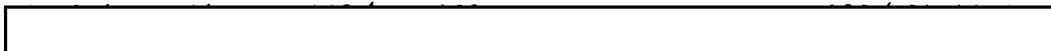


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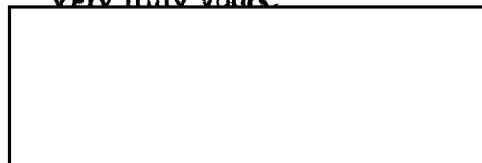
February 2, 1968

If questions arise or if we can be of further assistance, please do not hesitate to contact



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Very truly yours,



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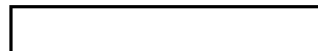
Manager of Administration

jwc

Enclosure 1 - Technical Proposal

Enclosure 2 - Price Proposal

Enclosure 3 - Original letter dated 21 Dec 1967 from

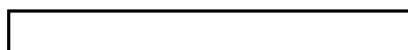


plus enclosures to that letter

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cc:



Post Office Box 8031

Southwest Station

Washington, D. C. 20024

Technical Proposal
for an
ADVANCED LIGHT TABLE

26 January 1968

Prepared by



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Proposal No.A-1219

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1.0

INTRODUCTION

This proposal describes a light table prototype of advanced design fully responsive to the requirements of the procurement specification. The design concepts involved represent the extensive experience of [] in this type of equipment resulting in a program with a minimum of new development and technical risk. In some respects, the proposed light table offers capabilities and features well beyond the minimum specifications and should provide a highly useful instrument yielding significant improvements in operation, reliability, and maintainability over previously developed light table prototypes.

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To further enhance the usefulness of the advanced light table, an alternate full power drive control system is offered which will provide uniform and consistent film speeds to as low as 0.10 inch per second without sacrificing performance in any other respect. Details of this proposal are presented in the Alternate Bid, Improved Low-Speed Full-Power Film Drive.

2.0

GENERAL

The advanced light table offers a compact and highly useful facility for viewing aerial film transparencies. Among the many attractive features embodied in its design are a variable intensity illumination system and a bi-directional manual and full-power film transport. Advanced materials and construction techniques are used to produce a lightweight and compact structure featuring a bi-axial tilting arrangement.

The light table operates on 117 volt, 60Hz power supplied through a grounded three-pin receptacle and power cord. All controls are grouped on a central panel at the front of the light table located for convenient use in either horizontal or tilted positions.

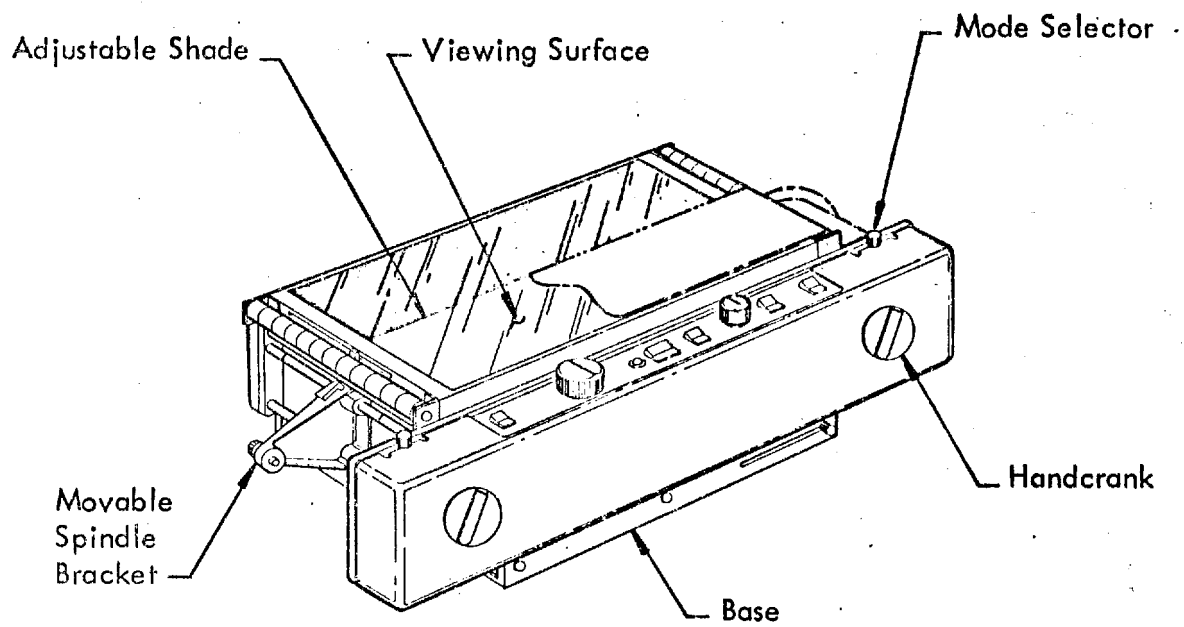



Figure 1. Advanced Light Table Prototype

3.0 ILLUMINATION SYSTEM

A variable intensity illumination system providing a broad range of viewing surface brightness and convenient operator control is featured in the advanced light table. High reliability proven components are used to ensure long trouble-free operation. A block diagram of the system is shown in Figure 2.

3.1 Illumination Surface

A 9-1/2 inch by 18 inch illuminated surface is provided for viewing 70mm, 5 inch, or 9-1/2 inch wide aerial films.

The illumination system uses a grid-type cold cathode lamp powered by a high voltage transformer and solid state dimming circuit. The maximum brightness control bypasses the dimming circuit to provide the high intensity feature. A diffuser panel located above the lamp unit ensures even illumination, to better than 10% uniformity, over the viewing surface. Tinted diffuser panels can be added to compensate for various film base colorations as required. The lamp unit is cooled by a silent forced air system to maintain a low viewing surface temperature. A whisper fan with large area air entry and exhaust ports is used to assure that blower noise is held to a barely audible level. Lighting systems of this type have been a feature of the highly successful line of  multiformat light tables.

A separate fuse is provided to protect the lighting system from overloads and is located on the rear of the light table adjacent to the power receptacle.

3.2 Lighting Controls

Controls for the illumination system are located on the control panel to the operator's right. A rotary intensity dial provides uniformly variable control from approximately 200 to more than 2000 ft-lamberts surface brightness. Rotation fully counterclockwise de-energizes the system. As an added feature, additional rocker

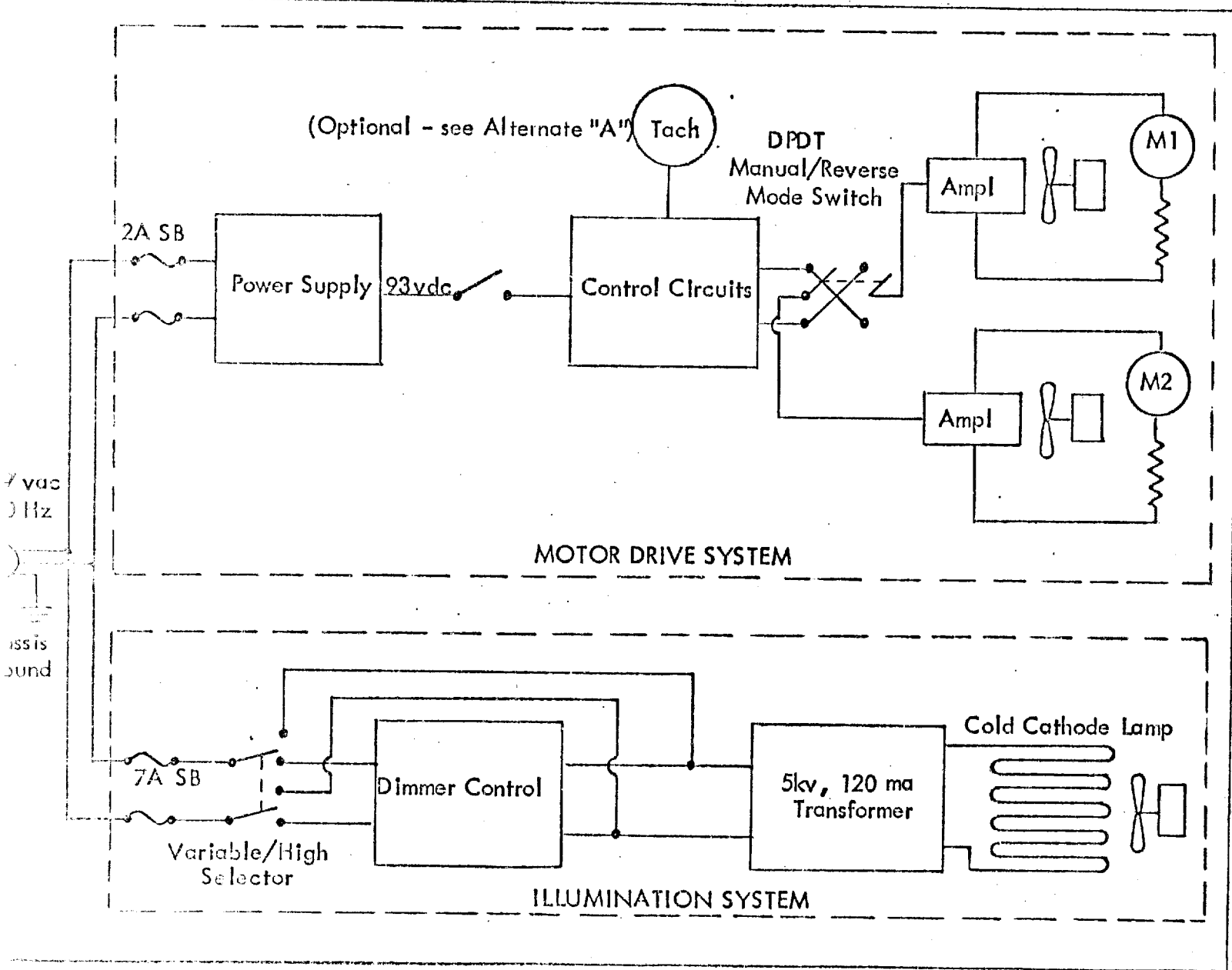


Figure 2. SYSTEM BLOCK DIAGRAM

switch adjacent to this control permits the operator to select a maximum surface brightness of approximately 2700 ft-lamberts for viewing of denser transparencies.

3.3 Adjustable Shade

An opaque adjustable light shade is located between the glass surface and the diffuser to shield the operator from direct glare in areas not threaded with film. This shade is mechanically adjustable by means of a conveniently located thumbwheel. The front edge of the shade is attached to a rod supported on Rolamite bearings, a relatively new innovation providing excellent control with near-frictionless movement.

4.0 FILM TRANSPORT

The advanced light table provides both manual and full-power motorized drives for MS26565 film spools up to 500 foot capacity. All controls are located at the top front surface of the light table, recessed to avoid accidental operation, but within easy reach by the operator and are clearly identifiable by shape, size, location, and markings. Low inertia segmented guide rollers are located at each end of the viewing surface. These rollers are of smooth surfaced nylon material to prevent film damage or abrasion and are segmented to improve tracking performance.

4.1 Manual Film Drive

The advanced light table features a bi-directional manual film transport for low to medium speed film movement. Three flush hand cranks are provided, each capable of emulsion up or emulsion down winding, in addition to forward and reverse operation.

Film tension is produced by concealed opposed-torque DC pancake-type motors, each coupled to one of the film spool spindles through a silent toothed belt. A rocker-type switch on the control panel de-energizes the tension motors during film threading operations.

This concept has been successfully used in similar ☐ developed light table programs. It requires no electrical clutches, brakes, or mechanical slip clutches; therefore, greatly enhancing reliability and maintenance factors. The system is quiet, lightweight, relatively simple and highly reliable compared to competitive tensioned manual drive arrangements.

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The front drive spindles are permanently located while the rear spindles are on movable brackets to permit mounting of 70mm to 9-1/2 inch wide film spools. Reference marks are provided to facilitate spindle bracket location for intermediate film widths. The rear spindles are equipped with a convenient spring-loaded retracting pin to engage the reel hub. This feature enables the operator to load film spools without the necessity of relocating the spindle brackets.

A mode selector lever is located on the front of the light table structure adjacent to each drive spindle to permit the operator to select emulsion up or down film loading. A neutral position is provided to disengage handcranks during full power drive. A positive detent at each position prevents accidental engagement when the light table is in operation.

4.2 Full Power Drive

The torque motor system also provides rapid rewind and variable speed film motion from as low as one-to-two inches per second, to better than 300 feet per minute. Controls for the transport system are located on the control panel at the operator's left and consist of a rotary film speed/direction knob and a rocker-type film tension switch. The system is completely bi-directional and is capable of maintaining adequate film tension under all conditions of operation. Silent operation and mechanical simplicity are outstanding features of this drive concept.

Rocker-type mode switches are located adjacent to each film spindle to permit independent emulsion up or emulsion down spooling.

The motor control circuits are packaged on printed circuit boards supplied with forced air cooling for adequate heat dissipation and protected by a separate fuse located at the rear of the light table. Circuit design and selection of components will display simplicity and high reliability as prime considerations.

5.0 LIGHT TABLE STRUCTURE

An extremely lightweight and compact structure has been devised to support the illumination and film transport systems of the light table and provide bi-axial tilting action.

5.1 Structural Concept

Functional elements of the advanced light table are housed in an aluminum honeycomb panel structure combining attractive appearance with a high strength-to-weight ratio. This structural concept, used primarily in aircraft and space applications, carries the multiple advantages of extremely high strength and rigidity with minimal weight. Compared with a solid aluminum section the same rigidity, the equivalent honeycomb panel weighs only a tenth as much. The honeycomb panel construction technique has been a feature of other lightweight light tables and its application in this unit makes possible the low overall weight required. Furthermore, honeycomb sandwich panel construction provides high acoustic damping ability and retains its structural properties over a broad temperature range. It is also highly resistant to the effects of humidity and fungus.

The tiltable portion of the table is comprised of two parallel rectangular honeycomb panels joined by fabricated aluminum alloy sections. The illumination system light box is mounted in the top of this structure along with the segmented film roller brackets. The front panel serves as the base for the transport drive mechanism, motors, handcranks, and spindles, and provides attachment for the control panel and electronics chassis.

The guide members for the movable rear spindle brackets are located immediately below the film rollers. The rear panel provides attachments for the rear handcrank and adjustable shade mechanism. Lightweight formed covers conceal the moving mechanisms at the front and rear as a personnel safety feature and also contribution to the attractive overall appearance of the advanced light table.

The light table base is also fabricated from honeycomb panel. The lighting transformer, some of the control electronics and the tilt and counterbalance elements are located on the base assembly. These items are also protected by a formed cover when the table is in a tilted position.

5.2 Tilt Mechanism

Bi-axial tilting of the light table is accomplished by a combination hinge and pivot arrangement whereby the table may be tilted toward the operator up to 75° above horizontal along its short axis or rotated through 90° horizontally and tilted on its long axis. Tilting operations are manual but virtually effortless due to the use of sliding guide links and counterbalance springs which assure smooth motion and compensate for the weight of the moving parts. Positive locks are provided to secure the table at any tilted position.

The lighting transformer and other heavy components are located in the base of the light table to ensure stability under all conditions of tilt and film loading.

5.3 Weights and Dimensions

The estimated overall weight of the advanced light table has been reduced to less than the specified 60 pounds through extensive use of lightweight alloys and construction techniques. Much of this weight reduction can be attributed to the aluminum honeycomb panel structure; however, all areas of the light table have received special attention to achieving minimum weight. Heavy castings have been

eliminated throughout in favor of more efficient fabricated and formed members. Complex and heavy mechanisms have been avoided, where possible, and supplanted by simpler elements or electronic devices. A brief weight estimate tabulation is shown below in Table 1.

TABLE 1
ESTIMATED WEIGHT TABULATION

Lamp Box w/Glass, Shade, Blower	10.9 lbs.
Drive Motors, Spindles, Gears, Cranks	13.8 lbs.
Honeycomb Base, Frame, Brackets	9.4 lbs.
Cover Panels, Hinges, Tilt Mech., Springs	3.9 lbs.
Controls, Knobs, Circuit Boards, Switches	2.8 lbs.
Wiring, Miscellaneous Hardware	3.0 lbs.
Lighting Transformer	15.0 lbs.
Total	<hr/> 58.8 lbs.

Overall height is 9 inches when horizontal, width 16 inches, and length 32 inches, exclusive of film spools. Spool-to-spool center distance is 29-1/2 inches.

Because of its shape and size, the unit can be moved with reasonable ease by one person. Convenient handholds for carrying are incorporated into each end of the light table below the spindle bracket guides.

6.0 FABRICATION AND PRODUCTION CONSIDERATIONS

The challenge of combining high performance, reliability, and functional utility with simplicity, compactness, and low weight in the advanced light table dictates the use of many unique concepts in component application and construction technique. Some aspects of prototype fabrication and production unit manufacturing

may require initial technical attention although none of the approaches used represent practices beyond the present state-of-the-art. A brief discussion of some of these potential problem areas follows:

a) Lighting Uniformity

Tests have been performed on lighting panels similar to that required in the advanced light table and results indicate that the 10% uniformity specification can be achieved but may be difficult to repeat consistently in production quantities. Some additional effort may be required in diffuser and/or reflector design to provide a greater production unit margin of performance.

b) Maximum Operating Temperature Rise

The 20°F maximum permissible temperature rise requirement can be met by careful cooling fan and duct design but involves trade-off considerations with acoustic noise, weight, and complexity. Quiet, long-life cooling fans are a necessity here but duct design will be equally important in achieving temperature and noise goals. Extensive [] experience in this area will be utilized to ensure that these requirements will be consistently met in production units.

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c) Acoustic Noise

Although most inherently noisy mechanisms have been eliminated in the [] advanced light table concept, some noise-producing elements are necessary for transporting and viewing film. Items which will receive particular attention in this regard are the motors, film guide rollers, handcrank drive gears, lighting transformer, and the previously discussed cooling system.

The basic light table design employs covers enclosing all electrical equipment and mechanisms which will contribute substantially noise reduction. Some sound deadening material may be required however to control cover resonance. The aluminum honeycomb structural material provides excellent damping itself which will be of considerable benefit in noise control. Careful selection of materials, finishes, fits, and tolerances will be employed in the film roller and drive gear areas to further reduce noise generation at the source.

d) Weight

In order to maintain the low weight allocations itemized in Table 1, Section 5.3, advanced construction techniques and consistent weight evaluation in the selection of materials and components will be necessary.

The aluminum honeycomb structural concept requires careful planning to realize the full potential of its weight savings advantages. This technique also involves considerable fabrication tooling for quantity production. ☐ experience in this type of construction will be invaluable in producing a lightweight, practical advanced light table.

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Other factors which will significantly influence the overall weight of the unit are the lighting transformer, film drive mechanisms, and tilting provisions. Intensive weight consideration will be required in all of these areas to realize the low projected overall weight in not only the prototype but also in production light tables.

7.0

ALTERNATE BID

IMPROVED LOW-SPEED FULL-POWER FILM DRIVE

The film transport system of the basic proposal provide full-power film motion down to approximately one-to-two inches per second and manual drive to the limits of the skill of the operator.

A more sophisticated full-power drive system can be supplied offering uniform film speeds under all conditions down to approximately 0.10 inch per second, virtually eliminating the need for manual film drive. This system would also permit near synchronous operation of two or more light tables with minimal operator attention.

The alternate control system includes a drive capstan and uses a precision tachometer feedback servo which automatically compensates for motor speed and film loading variations. Overall weight of the light table is not affected substantially and all other features of the table, such as the three-crank manual drive and rapid rewind, are retained.

8.0 WORK STATEMENTItem 1 - Prototype - Basic Bid

Design and fabricate one (1) each, Advanced Light Table Prototype, in accordance with customer's specifications dated 6 November 1967 and as supplemented herein by [] Technical Proposal A-1219, Sections 1.0 - 6.0, inclusive. Two (2) complete sets of reproducible engineering drawings are to be delivered, said drawings being those created during the performance of this contract to [] commercial quality engineering practices. Other contractual documentation as delineated by the following specifications is included:

Specification DB-1001 dated 31 August 1966

Specification DB-1003 dated 31 August 1966.

Item 1A - Prototype - Alternate Bid

Same as Item 1 above, but including requirements delineated in Section 7.0 herein.

Item 2 - Production

Fabricate twenty-five (25) each Advanced Light Tables, in accordance with requirements resulting from the performance of Item 1 hereinabove.

Item 3 - Production

Fabricate fifty (50) each Advanced Light Tables, in accordance with requirements resulting from the performance of Item 1 hereinabove.

Item 4 - Production

Fabricate seventy-five (75) each Advanced Light Tables, in accordance with requirements resulting from the performance of Item 1 hereinabove.

Item 5 - Production

Fabricate one-hundred (100) each Advanced Light Tables, in accordance with requirements resulting from the performance of Item 1 hereinabove.

9.0

DELIVERY

After receipt and acceptance by of contractual authority to proceed, delivery is as follows:

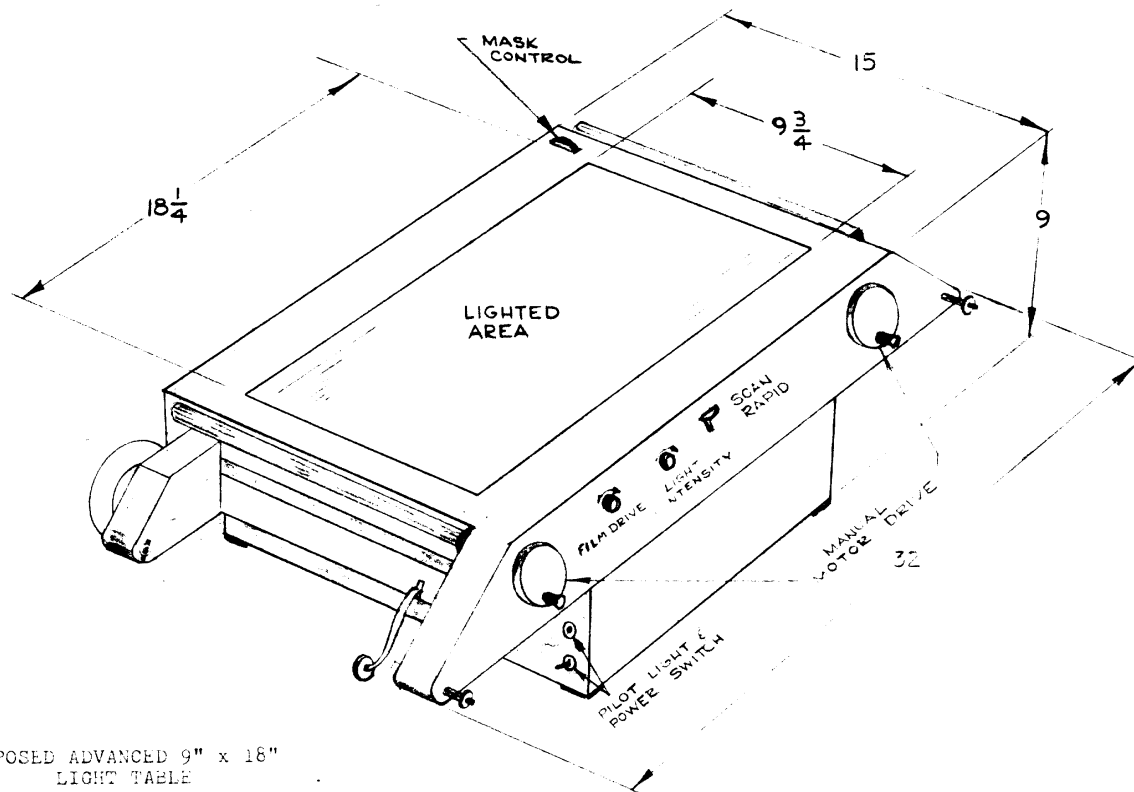
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<u>Item No.</u>	<u>Delivery Date or Sooner</u>
Item 1 - Prototype, Basic Bid	22 weeks
Item 1A - Prototype, Alternate Bid	26 weeks
Item 2 - Production, 25 each	Five (5) each in seven months, rate of twenty (20) each per month thereafter.
Item 3 - Production, 50 each	
Item 4 - Production, 75 each	
Item 5 - Production, 100 each	

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PROPOSED ADVANCED 9" x 18"
LIGHT TABLE

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Descriptive Specification
Proposed Advanced 9" x 18" Light Table

1. Purpose

The proposed Advanced 9" x 18" Light Table is a table top mounting unit for display and handling of 70mm to 9-1/2" wide aerial film roll transparencies, having manual and powered film transports, variable high intensity illumination, and tilting provisions for the viewing surface, to provide increased operator comfort, increased illumination, easy loading and superior film handling capability in a portable, compact unit.

2. General Description

The unit defined in this specification is intended to meet the requirements described in "Design Objectives, Advanced Light Table", dated 6 November 1967.

Basic features include: Lighted area 9-1/2" wide, 18" long, illuminated to at least 2000 ft. Lamberts maximum brightness (2500 ft. L. design goal), variable from 10% to 100%; top surface tiltable either X- or Y-axis up to 75° above horizontal, with positive position locking; minimum weight compatible with function; manual and full powered film transport system permitting choice of manual film feeding or power driven film movement in wide range of speeds for slow scanning to rapid advance or rewind, with capabilities of handling all combinations of emulsion in/out up/down for single films 70mm to 9-1/2" wide on up to 500 ft. (7-5/8" diam.) spools; and movable light mask built in between glass top and diffuser. Design goal for total weight of the unit is 60 lbs., although 75 lbs. appears more likely under current estimates.

- 3. Illumination system is to be a cold cathode lamp driven with a saturable transformer through a solid state dimming control utilizing Triac circuitry. The control is to provide smooth dimming from full intensity of at least 2000 ft. L. (2500 ft. L. design goal) to 200 ft. L. or less for minimum, flicker free. Light readings are for 115V, 60 cycle supply and at an ambient temperature of 70° F. Color temperature is to be in excess of 5000° K. Uniformity of illumination is to be plus or minus 10% over the entire viewing area.**

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An extra light grid assembly is to be supplied with the prototype which has a color temperature of about 3500° K. This grid will permit evaluation of the two colors to see if one gives better viewing than the other.

The light source system is designed to maintain at least 90% of original brightness after 2000 hours of operation; and 75% for next 2000 hours.

- 3.1. Masking of the area of light surface not covered by film is provided by a mechanically actuated opaque shade traversing out from the rear long edge of the light surface up to 7", with provisions for locking at any position. The mask is located below the stage glass and above the plastic diffuser. The mask will retract out of the viewing area when not in use.
- 3.2. Viewing area is to be a minimum of 9-1/2" wide by 18" long along the film axis. The stage surface is to be parallel ground and polished selected plate glass, resiliently bonded into an aluminum plate frame.
4. Film Transport is to be provided for single rolls of aerial film from 70mm to 9-1/2" wide on standard aerial film spools up to 7-5/8" diameter. The transport system will provide two modes of operation, either full power drive or direct-ratio manual drive at the operator's option. Drives are bi-directional and can be arranged for handling all combinations of emulsion up or down on the viewing stage and emulsion wrapped in or out on the film spool.
- 4.1. General arrangement of the drive spindles will be a fixed position spindle at each end of the light table which will locate the forward edge of the film (the edge nearest the operator when running film left to right) even with the front edge of the light stage, and two movable rear support spindles to accommodate the various lengths of spools. The forward spindles will have spring loaded telescopic shafts with ball-detent locking in the working position to prevent dropping a film spool during operation. The rear support spindles will have no spring adjustment or retraction.
- 4.2. Manual drive of the film can be operated from any of the three hand wheels, two located on the long forward edge of the light box, and the other located on the opposite side on the end nearest the operator when running film to and from the operator. The hand wheels will connect to the drive spindles through electric clutch couplings which uncouple the manual knobs when the transport is operated under full

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power. The manual drive is directly coupled to the front spindles with a minimum of backlash to provide a very sensitive "feel" for close film positioning, and positive response.

- 4.3. Full power transport requires no extra motions by the operator. He simply turns the power transport control knob, located near the top front of the light table at the left end, in the direction he wishes to run the film. Film speed is proportional from zero to maximum; approximately 100 ft. per min. for scanning, or 350 ft. per min. for rapid. A lever switch is used to select "SCAN" or "RAPID" mode. The speed/direction control knob is positively detented to the zero position.

The film drive motors, which also supply the tensioning, are the same Inland torque motors currently used on our regular film drives, except that they are geared down 1.5:1 to provide more torque available to the spindles for more positive drive.

- 4.4. Film tension, provided as noted above by the torque motors, is proportioned through each spindle by Teflon covered monitoring rollers which sense the amount of film on each spool and set the correct holding torque. Thus, the film will remain at rest until such time as the operator chooses to move it by either the manual or power means provided. This system is simple and requires no setting by the operator.

By virtue of the torque system the film is always under close control without danger of dropping slack or being snapped. In addition, the system is relatively "soft"; that is accelerations and decelerations are of low magnitude. Thus, the film is well protected from damage.

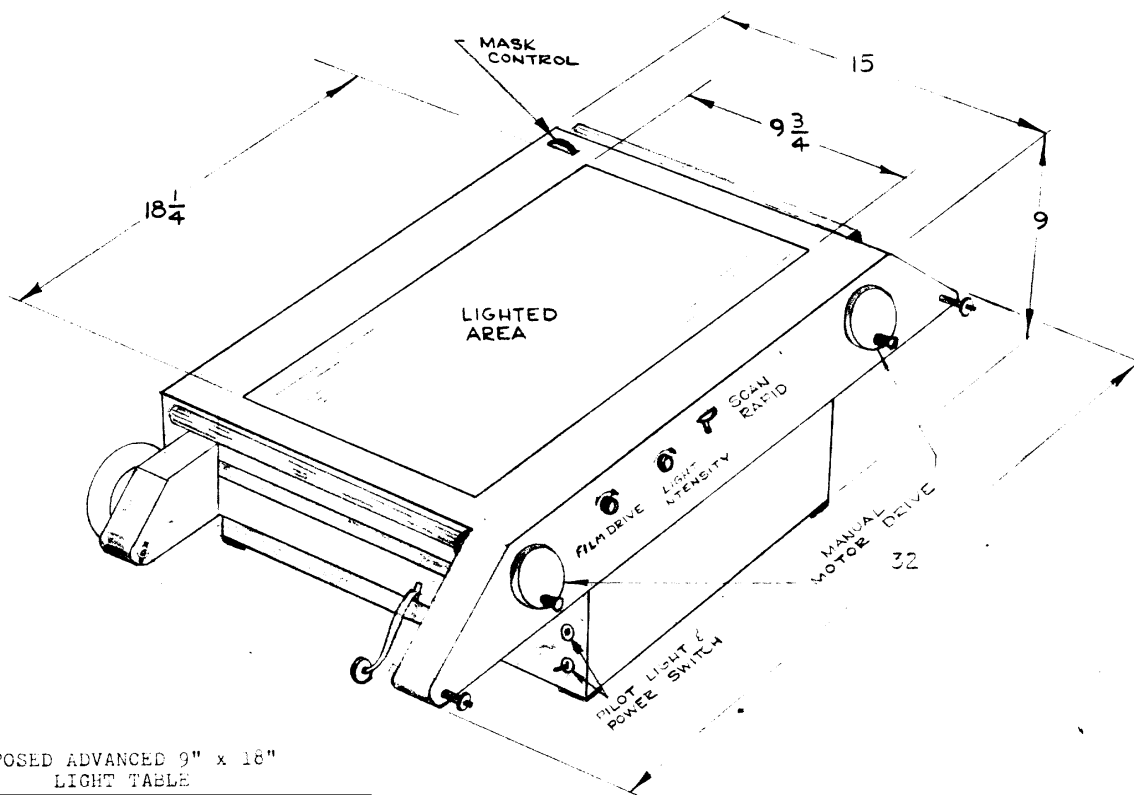
- 4.5. Spindle rotation is selected, when film is loaded, by a switch for each torque motor. All modes of emulsion in/out and up/down can be selected in this manner. The film will always move over the table in the same direction as the tops of the manual control knobs move.
5. Tilting is available from 0° to 75° from horizontal in either X or Y direction. An intermediate plate between the base, which serves as a transformer housing, and the light box has provisions for indexing the light box 90° relative to the base. A heavy continuous hinge serves at the pivot, and multiple disc quadrants provide several clamping surfaces for secure locking at any selected angle of tilt with low clamping effort. The clamping shaft has handles at both sides of the base box for convenience of left or right handed operators

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6. Electrical controls are simplified and readily accessible for all functions. A master On-Off switch is located on the front of the light box with a pilot indicator light. Film transport on and off is operated with an illuminated push-push switch. A lever switch is used to select scan or rapid power transport. In case of power failure in the motor drive system, limited mechanical drive sufficient for winding a roll of film off the table is provided by turning the film transport power off, and leaving the master power switch on.

All circuits are adequately fuse protected, and all fuses are easily reached from the rear of the base. Special consideration is given to ease of access for adjustment or maintenance of all components of this equipment. There are no exposed gears or electrical terminals which might be a personnel hazard. All circuits and components are properly grounded for maximum safety.

7. Overall size of the equipment is within the 32" length, 16" width and 9" height to the viewing stage as required.
8. Power required is 100 to 125V, 60 cycle, 7 amperes. While the unit will perform over the above range of voltage, the light output is rated at 115V in a 70° F ambient temperature.
9. Maximum outside surface temperature on the equipment will not exceed 100° F in an 80° F ambient under continuous use. Some air circulation to cool the lamp is expected to be used to attain the desired light output.
10. Noise from the equipment with power transport off, but with tension system operating and illumination system on is not expected to be detectable with a broad band sound level meter above the ambient noise level at a distance of two feet from the top-front of the table (where ambient noise is defined as 63 db measured on the C weighted scale, 51 db on the B weighted scale, and 45 db on the A weighted scale of a General Radio Co. Type 1565-A Sound Level Meter). In full operation the table will not produce a noise level measured at a distance of 5 ft. from the table in excess of 5 db above the ambient of the C weighted scale nor 20 db above the ambient of the A weighted scale of the same sound level meter.



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